Determination of Public Land (Rangeland) Health for 65014-MCDOWELL

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within McDowell allotment #65014 East pasture meets the Upland and Biotic standards but with some concerns with LPC habitat; the public land in the West pasture meets the Upland Standard but does not meet the Biotic standard in relation to Special Status Species. There are no Riparian issues present, therefore this standard was not addressed.

The West pasture of the McDowell allotment #65014 does not meet the New Mexico Standards for Public Land Health Biotic Standard regarding the Special Status Species (the Lesser Prairie Chicken habitat).

A review indicates there may be a combination of factors for not meeting the biotic standard with regard to LPC habitat. The shinnery oak vegetation treatments done in the early 1990's significantly reduced the shinnery oak composition without a corresponding increase in the preferred bluestem species necessary for quality LPC habitat; at present threeawn species are the dominant grass specie. Threeawn species, classified as a mid grass, provide minimum cover benefits to the nesting habitat for the LPC. The preferred bluestem species are less than five percent of the production, frequency and ground cover composition.

There is no doubt that the droughy condition has had an impact on the vegetative resources but livestock management practices have also impacted the vegetative resource.

In 1996 grazing use was converted from yearlong use with 53 Animal Units (AUs) to a seasonal use (March, May 15 - October15) with 106 yearlings. The concept was to graze both pastures in March then during the period of May 15 - October15 one of the pastures would be grazed during the first half of the growing season and then graze the other pasture the latter half of the growing season; this allowed some growing season rest in each pasture. The age and condition of the pasture fence (constructed over 20 years ago) has hampered the ability to control the livestock and adequately provide for growing seasons rest for either pasture.

Although yearlings typically consume less forage they tend to graze in a herd and cover more ground than mother cows. This behavior coupled with the high palatably of bluestem species

during the growing season may be a contributing factor to the continuing low bluestem composition.

Measures have been implemented to reverse the current conditions. These include a Rangeland Use Agreement to place 20 Animal Units (seasonal use) into temporary non-use and the fence is scheduled to be reconstructed in 2007.

Field Manager Date

Standards of Public Land Health
Evaluation of 65014-MCDOWELL Allotment
[10/15/2005]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within the McDowell allotment #65014. These assessments evaluated Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within each study site location and surrounding vicinity. Existing monitoring data was incorporated into and in support of these field assessments. A summary of each assessment is attached and shown in the following table

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
65014-EAST-D002	X			X	*		N/A		
65014-WEST-D001 (*)	X	*			*	X	N/A		

Twenty-two (22) indicators for Rngeland Health were evaluated for public land on allotment #65014, McDowell. Ten (10) of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with previous data collected on two locations within this allotment were utilized to make rangeland health determinations.

East and West Pastures both are CP-2 Deep Sand ecological sites on (RPD) Roswell-Jalmar fine sand, hilly occurring on high terraces in eastern parts of area surveyed. Sizes are 803 acres/325 hectares and 1,084 acres/438 hectares respectively. Slope is 0 to 25 percent with elevation between 3,900ft/1,182m and 4,100 ft/1,242 m. Roswell and Jalmar soil is on hummocky sand dunes and in depressional/interdunal areas respectively. Roswell and Jalmar formed in eolian and eolian/alluvial deposits respectively. Both are deep and excessively drained with an effective rooting depth of 60 in/152 cm. Both pastures are currently utilized by livestock at conservative levels. East Pasture currently rates most indicators None to Slight and Slight to Moderate with normal range of variability from established parameters. Virtually no shinnery oak (Quercus havardii) was observed due to some past chemical treatments from allotment entrance to these pastures themselves. Only those dunal areas southward is where shinnery oak was observed. Soil surface resistance to erosion rated Moderate however, as interspace ped samples melted readily while canopy samples held together. One lesser prairie chicken (Tympanuchus pallidicinctus) was sighted however. Grass and forb litter has deposited on surfaces where bare ground and basal hits were not counted. Estimated percentage of 70-80 was estimated for this hydrologic and biotic attribute. Little bluestem (Schizachyrium scoparium), sand sage (Artemesia filifolia), yucca (Yucca spp.), blue grama (Bouteloua gracilis), dropseed (Sporobolus spp.) and threeawn (Aristida spp.) were some of those plant species encountered.

West Pasture also rated a majority of indicators as deviating only at normal range of variability from established parameters. Exceptions were bare ground, soil surface resistance to erosion, annual production, invasive plants and wildlife/special status species habitat with Moderate or Moderate/Extreme departure. Bare ground with an estimate of 50 percent, slightly exceeds ESD and long-term average figures. Interspace ped samples melted readily using soil site stability tests, while under canopy samples held together indicating increased organic matter. Annual production also was somewhat down from long-term average with an estimate of 450 lbs/ac or kg/ha. This is only 40 percent of potential for ESD and long-term average figures. Invasive plants rates Moderate as yucca and snakeweed (Gutierrezia sarothrae) were observed scattered throughout. Wildlife and special species status habitat indicated almost no shinnery and reduced sand and little bluestem for LPC nesting. Threeawn was however dominant with shrubs like sand sage, prickly pear (Opuntia englemannia), locoweed (Astragalus spp.) and forbs buckwheat (Eriogonum spp.) and sunflower (Helianthus spp.) observed as well.

Special Status Species:

Lek surveys for the Lesser Prairie Chicken (LPC) found active lek sites within the surrounding area but none on this allotment. LPC habitat is a concern throughout the allotment but particularily in the West pasture. This area has almost no shinnery oak and very little sand bluestem or little bluestem present in the vegetative composition. This lack of preferred grasses indicates the LPCs are unlikely to nest successfully in this area.

In the professional opinion of Assessment Team, public land within McDowell allotment #65014 East pasture meets the Upland and Biotic standards but with some concerns with LPC habitat; the public land in the West pasture meets the Upland Standard but does not meet the Biotic standard in relation to Special Status Species. There are no Riparian issues present therefore this standard was not addressed.

See site notes and recommendations for further information regarding evaluations on this allotment.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Special Status Species Habitat

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: The biotic conditions (as a whole) within the allotment are at or below the minimum requirements needed for the Lesser Prairie Chicken (LPC) habitat. It is recommended that the following changes be considered.

1. Reconstruct the current pasture fence between the East and West pastures; the current condition does not provide for control of livestock or rotational grazing.

2. Construct a new divisional fence in the West pasture to provide the allotment into three pastures. This will necessitate an extension of the existing water pipeline into the new pasture. A water storage tank may be necessary.

3. Changes to the current livestock management scheme are needed. These changes may include a reduction in livestock numbers, a shortened grazing period, and the implementation of a three pasture rest/rotation system with one pasture rested for 12 months.

4. Vegetative treatments should also be considered. These may include mesquite treatment and seeding or planting of bluestem species to increase the composition of desired species.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65014-EAST-D002			
Legal Land Desc	SWNE 19 0060S 0310E Meridian 23	Acreage	803
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060003210 RAILROAD MOUNTAIN		
Observers	ARTHUN/MOE	Observation Date	01/11/2006
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RPD	Soil Taxon Name	ROSWELL
Texture Class	NM644 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM644 FINE SANDS,HILLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	19.55	NOAA Growing Season Precipitation	15.86
NOAA Avg Annual Precipitation	15.73	NOAA Avg Growing Season Precipitation	13.34
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground					X
Comments:	Current estimate is 25-30%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or				X	

	Deposition Areas					
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspace melted/canopy soil ped sample held together.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Only minor deviations.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	70-80% is the current estimate.					
B	Annual Production				X	
Comments:	Current estimate is 700 lbs/ac or kg/ha.					
B	Invasive Plants				X	
Comments:	Yucca less than scattered.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crust observed.					
B	Wildlife Habitat				X	
Comments:	No shinnery except on dunes to south.					
B	Wildlife Populations				X	
Comments:	Saw LPC (1) Good deer and pronghorn					
B	Special Status Species Habitat				X	
Comments:	Grass nesting cover good - no oak					
B	Special Status Species Populations			X		
Comments:	Good LPC pop in area but no known leks on the allotment					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	1	5	5
B	Biotic	0	0	2	7	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	1	9
Hydrologic		0	1	10
Biotic		0	2	11

Site Notes: Very little oak at the site. One prairie chicken was sighted. There are dunes to the south. Other than the absence of shinnery, the grass and forb component is adequate for site protection. The site was also utilized but at a very conservative rate. There is evidence that past chemical treatment may account for absence of shinnery.

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 65014-WEST-D001			
Legal Land Desc	SWSW 24 0060S 0300E Meridian 23	Acreage	1084
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060003210 RAILROAD MOUNTAIN		
Observers	ARTHUN/MOE	Observation Date	01/11/2006
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RPD	Soil Taxon Name	ROSWELL
Texture Class	NM644 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM644 FINE SANDS,HILLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	19.55	NOAA Growing Season Precipitation	15.86
NOAA Avg Annual Precipitation	15.73	NOAA Avg Growing Season Precipitation	13.34
Disturbances and Animal Use:	Livestock have utilized this pasture at conservative levels.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		
Comments:	50% is the current estimate					

S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspace soil ped sample fell apart/canopy held together.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Only slight departures exist.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	60% is the current estimate.					
B	Annual Production			X		
Comments:	500 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants				X	
Comments:						
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical/bio crust.					
B	Wildlife Habitat			X		
Comments:	Almost no oak. Very little sand or little bluestem for LPC nesting.					
B	Wildlife Populations					
Comments:	Pronghorn - quail tracks					

B	Special Status Species Habitat		X			
Comments:	Almost no oak and very little sand bluestem and little bluestem.					
B	Special Status Species Populations			X		
Comments:	Surveys found leks in adjacent areas but not on this allotment.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	2	5	3
H	Hydrologic	0	0	2	5	4
B	Biotic	0	1	4	3	4

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	2	8
Hydrologic		0	2	9
Biotic		1	4	7

Site Notes: On this site, threeawn is the predominant grass; no shinnery oak or very minute amounts. The site is grazed also at a very conservative rate. The bluestem component is also down. This site appears more degraded than the other one on this allotment, but remains in the moderate category.